

REMARKS

Claims 1 – 26 are pending in the application. Claim 1 is amended and no new matter is added. Claims 18-26 are withdrawn.

Applicants reserve the right to file a divisional application on a later date.

Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

I. Rejection of Claims 1-5, 7-9, and 11 under 35 U.S.C. § 102 as being anticipated by Masuda (US 2004/0107865): The Examiner rejects claims 1-5, 7-9, and 11 under 35 U.S.C. § 102 (b) as being anticipated by Kumar et al. The Examiner indicates that Masuda discloses a wafer processing device comprising: a platform for supporting an object to be heated, the platform comprises a substrate having upper and lower relative flat surfaces, *a shaft extending substantially traverse to the platform (Figure 4 Item 11), the shaft is comprised of graphite (Paragraph 76 Lines 1-12).* Applicants respectfully traverse this rejection.

Masuda is a pending patent application assigned to the Applicants. In Figure 4 of Masuda, item 11 is denoted as "ELECTRODE." In the Masuda specification, item 11 is referred to as an electrode in the figures. Furthermore in paragraph 62 of Masuda, "Referring specifically to FIG. 3 and FIG. 4, ... *a substrate 6* (on which a DLC coating layer 4 should be deposited) *may be placed on an electrode 11* in a vacuum container 10." Item 11 is simply NOT a shaft, and not a shaft that is connected to and "extending substantially transverse to the platform [substrate]."

It should be further noted that the claimed invention as amended is directed to a wafer processing device having a top coating being composed of at least a material selected from the group consisting of a nitride, carbide, carbonitride or oxynitride of elements selected from a group consisting of B, Al, Si, Ga, refractory hard metals, transition metals, and combinations thereof. The Masuda discloses a device having a coating layer "consisting essentially of a non-crystalline carbon (DLC)" and not a coating layer being composed of at least a nitride, carbide, carbonitride, or oxynitride as in the claimed invention.

For prior art to anticipate under section 102, every element of the claimed invention must be identically disclosed, either expressly or under principles of inherency, in a single reference. *Corning Glass Works v. Sumitomo Electric*, 9 U.S.P.Q. 2d 1962, 1965 (Fed. Cir. 1989). Applicants respectfully submit that Masuda does not disclose all the elements of the invention of the claims 1-5, 7-9, and 11, particularly a wafer processing device with a platform having a shaft "extending substantially transverse to the platform" and having a top coating being composed of at least a material selected from the group consisting of a nitride, carbide, carbonitride or oxynitride of elements selected from a group consisting of B, Al, Si, Ga, refractory hard metals, transition metals, and combinations thereof.

Claims 2-5, 1-9, and 11 are dependent claims; all depend on claim 1 with a requirement for a shaft extending substantially transverse to the platform. As Masuda fails to identically disclose the claimed invention, the rejection of claims 1-5, 7-9, and 11 under 35 U.S.C. § 102 (b) is respectfully traversed.

II. 35 U.S.C. § 103 rejection of claim 10 as being unpatentable over Masuda (US 2004/0107865) in view of Nishikawa (US 6,213,478) The Examiner indicates that Nishikawa discloses a shaft and a platform that form a single unitary body. The Examiner indicates that Masuda and Nishikawa are analogous art and it would have been obvious to a person of ordinary skill in the art to form the device of Masuda including the graphite shaft and the graphite shaft forming a single unitary body in view of the teaching of Nishikawa. The Examiner acknowledges that Masuda does not expressly state that the graphite shaft and the graphite platform form a single unitary body.

Masuda discloses a wafer handling device having a coating layer “consisting essentially of a non-crystalline carbon (DLC).” Nowhere in the Masuda wafer handling device, “a shaft extending substantially transverse to the platform” is disclosed. Nishikawa teaches a collet assembly for the easy placement of a susceptors shaft (col. 4, lines 20-40) with the collet closing around the susceptor shaft. There is nothing in either Masuda or Nishikawa to suggest a wafer handling device having a graphite shaft and a graphite platform forming a single unitary body.

“To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” M.P.E.P. § 2143.03. Applicants respectfully request a withdrawal of the §103 rejection and an allowance of claim 10.

III. 35 U.S.C. § 103 rejection of claims 12, 15, and 16 as being unpatentable over Masuda (US 2004/0107865) in view of Komino (US 5,478,429) The Examiner indicates that Komino discloses two electrical conductors, which are concentric with the first electrical conductor being disposed within the second electrical conductor. The Examiner alleges that it would have been obvious to combine Masuda with Komino to obtain the claimed invention.

Komino discloses a plasma processing apparatus with a susceptor having “[a] susceptor support base 31 having, e.g., a columnar shape and consisting of a conductive metal, e.g., aluminum, is disposed at a central portion of the bottom surface of the process chamber 2.” (col. 4, lines 2-24). In Komino, the susceptor “[consists] of a conductive metal such as aluminum” (col. 4, line 25). As illustrated in Komino’s Figure 1, the susceptor base 12 which supports the susceptors 13 is NOT a shaft. Furthermore, the Komino electrodes are NOT housed in the shaft as shown in Figure 1, and as described by Komino: “An inner conductive rod 14 of the RF power supply rod is inserted from the lower side of the process chamber 1 to extend to the susceptor 13, and an outer conductive pipe 15 of the RF power supply rod is connected to the bottom wall of the process chamber 1.” (col. 1, lines 42-47.”

As previously discussed, Masuda discloses a wafer handling device having a coating layer “consisting essentially of a non-crystalline carbon (DLC)” and Masuda does not disclose a wafer handling device having “a shaft extending substantially transverse to the platform.” There is nothing in either Masuda nor Nishikawa to suggest a wafer handling device having a graphite shaft and a graphite platform forming a single unitary body of graphite, with concentric electrical conductors housed *within a graphite shaft* with the graphite shaft and graphite platform forming a single unitary body.

“To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” M.P.E.P. § 2143.03. Applicants respectfully request a withdrawal of the §103 rejection and an allowance of claims 12, 15 and 16.

IV. 35 U.S.C. § 103 rejection of claims 13 and 14 as being unpatentable over Masuda (US 2004/0107865) in view of Pratap (US 5,210,452) The Examiner indicates that Pratap discloses two electrical conductors that are symmetrically disposed on opposite sides of a shaft. He further indicates that Pratap also discloses a shaft that is essentially solid and the two electrical conductors are coated layers symmetrically disposed on opposite sides of the shaft. It is therefore obvious to combine the two references to get claims 13 and 14.

First of all, Pratap refers to an alternator utilizing stacked armature coils with the coils being symmetrically arranged for high energy pulsed output. “In order to rely on a reference as a basis for rejection of an applicant's invention [under 35 U.S.C. § 103], the reference must be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” *In re Oetiker*, 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1991).

Secondly, Pratap does have a shaft, for connecting to at least one end of said rotor along the longitudinal axis of the rotor (Pratap claims). The Pratap shaft is NOT for connecting with a platform forming a single unitary body. With respect to Figure 3A items 35 and 37 and column 6, lines 67-68 where the Examiner alleges that Pratap disclosing electrical conductors symmetrically disposed on opposite sides of a shaft, in full context, Pratap discloses that: “Located on the opposite end of rotor 12 from *thrust shaft* 28, and mechanically coupled to thrust shaft 28 and flywheel 38, is *connector shaft* 30. At the distal end of connector shaft 30 are a pair of main brush slip rings 35 and a pair of field excitation brush slip rings 37. Copper coated aluminum brush rings are preferably used for both sets of *slip rings 35 and 37 to minimize mass and inertia, which directly affects torsional stresses in shaft 30* during the discharge deceleration event.”

As previously indicated, Masuda does not disclose a wafer handling device having “a shaft extending substantially transverse to the platform.” There is nothing in either Masuda nor Nishikawa to suggest a wafer handling device having electrical conductors symmetrically disposed on opposite sides of a *graphite shaft*, nor a wafer handling device having a shaft which is essentially solid with two electrical conductors being *coated layers symmetrically*

disposed on opposite sides of the graphite shaft.

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. § 2143.03. Applicants respectfully request a withdrawal of the §103 rejection and an allowance of claims 13 and 14.

IV. 35 U.S.C. § 103 rejection of claim 17 as being unpatentable over Masuda (US 2004/0107865) in view of Kushihashi (US 2003/0217767) The Examiner indicates that Kushihashi discloses a first electrical conductor in a form of a graphite rod and a second electrical conductor in the form of a hollow rod, wherein the first and second conductors are separated by a layer of pyrolytic boron nitride ("pBN") The Examiner alleges that Masuda and Kushihashi are analogous art, dealing with high temperature process device.

Kushihashi does show in Figure 2 suggest a first electrical conductor in the form of a graphite rod 9, a second electrical conductor being a hollow rod 7 – which is made of metal or ceramic (column 1, line 5 of paragraph 5). The first and second conductors are separated by an electrically insulating material 7 comprising pBN. However, it should be noted that the hollow rod 7 in Kushihashi, i.e., the electrical conductor indicated by the Examiner, is that of "a thermocouple protective tube" and NOT an electrical conductor for connecting an electrode to an external source of power as in the claimed invention (claim 11, which claim 17 is dependent on).

Masuda does not disclose a wafer handling device having "a shaft extending substantially transverse to the platform." As the Masuda device does NOT have a shaft, therefore Masuda cannot / does not disclose a device having graphite electrical conductors contained within the shaft.

"Obviousness cannot be established by combining pieces of prior art absent some teaching, suggestion, or incentive supporting the combination." *In re Geiger*, 2 U.S.P.Q.2d 1276, 1278 (Fed. Cir. 1987). Furthermore, "[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. § 2143.03. Therefore, Applicants respectfully request a withdrawal of the §103 rejection and an allowance of claims 17.

V. 35 U.S.C. § 103 rejection of claim 17 as being unpatentable over Masuda (US 2004/0107865) in view of Kushihashi (US 2003/0217767) The Examiner indicates that Chu discloses an electrode arranged in a spiral pattern, and it would have been obvious to a person of ordinary skill to form the pyrolytic graphite strip of Masuda in the pattern suggested on Chu.

Chu discloses an electrostatic chuck with an electrode having a spiral form (col. 3, line 17) to be used in a process chamber for processing a wafer formed on an electrostatic chuck. Chu neither discloses nor suggests an electrostatic chuck, i.e., a wafer processing device, having a platform for supporting the wafer and with a plurality of coatings with the second coating composed of pyrolytic graphite disposed on the first coating in a pattern.

Masuda, the primary reference, does not cure the deficiency of Chu as Masuda does not even disclose the claimed invention of a wafer handling device having a graphite platform and "a [graphite] shaft extending substantially transverse to the platform." Neither reference, Masuda nor Nishikawa, teaches or discloses a wafer handling device having a graphite shaft and a graphite platform forming a single unitary body of graphite, comprising a plurality of coatings with the second coating being patterned to form a continuous elongated strip of pyrolytic graphite forming an electrical flow path.

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. § 2143.03. Applicants respectfully request a withdrawal of the §103 rejection and an allowance of claims 12, 15 and 16.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-2339.

Respectfully submitted,



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